

WHAT IS CLAIMED IS:

1. A relay device, comprising:

- a first interface unit connected to a first network;
a second interface unit connected to a second network;
a proxy configuration unit for disclosing a

device/service/sub-unit on the second network as an own device/service/sub-unit provided on the relay device with respect to a first network side;

10 a control command reception unit for receiving control command signals destined to the own device/service/sub-unit from the first network side;

a control command transmission unit for transmitting signals corresponding to the control command signals
15 received by the control command reception unit, to the device/service/sub-unit on the second network;

a contents protection information reception unit for receiving contents protection information destined to the own device/service/sub-unit, from a device on the first
20 network; and

a contents protection information transfer unit for transferring the contents protection information received by the contents protection information reception unit to the device/service/sub-unit on the second network, without
25 making any change in the contents protection information.

2. A relay device, comprising:

- a first interface unit connected to a first network;
a second interface unit connected to a second network;
30 a proxy configuration unit for disclosing each

device/service/sub-unit on the first network or the second network as an own device/service/sub-unit provided on the relay device with respect to respective another network side;

35 a control command reception unit for receiving control

command signals destined to the own device/service/sub-unit from a side of one network to which the own device/service/sub-unit is disclosed by the proxy configuration unit;

5 a control command transmission unit for transmitting signals corresponding to the control command signals received by the control command reception unit, to said each device/service/sub-unit on another network different from said one network;

10 a contents protection information reception unit for receiving contents protection information destined to the own device/service/sub-unit from a device on the first network or the second network;

15 a contents protection information transfer unit for transferring the contents protection information received by the contents protection information reception unit to said each device/service/sub-unit on said another network, without making any change in the contents protection information;

20 a contents reception unit for receiving contents destined to the own device/service/sub-unit and protected by a contents key obtained from the contents protection information, from a device on the first network or the second network; and

25 a contents transfer unit for transferring the contents received by the contents reception unit to said each device/service/sub-unit on said another network, without making any change in the contents.

30 3. The relay device of claim 2, wherein the contents protection information is information related to a contents protection procedure including an authentication and/or a key exchange between one device/service/sub-unit on the first network and another device/service/sub-unit on the
35 second network.

4. The relay device of claim 2, further comprising:
a configuration information reception unit for
receiving a configuration information from one
5 device/service/sub-unit on the first network or the second
network, the configuration information indicating at least
a presence or absence of an authentication format for said
one device/service/sub-unit; and
a configuration recognition unit for recognizing a
10 configuration of said one device/service/sub-unit according
to the configuration information received by the
configuration information reception unit.
5. A relay device, comprising:
15 a first interface unit connected to a first network;
a second interface unit connected to a second network;
a proxy configuration unit for disclosing each
device/service/sub-unit on the first network or the second
network as an own device/service/sub-unit provided on the
20 relay device with respect to respective another network
side;
a control command reception unit for receiving control
command signals destined to the own device/service/sub-unit
from a side of one network to which the own
25 device/service/sub-unit is disclosed by the proxy
configuration unit;
a control command transmission unit for transmitting
signals corresponding to the control command signals
received by the control command reception unit, to said
30 each device/service/sub-unit on another network different
from said one network;
a first contents protection unit for carrying out a
contents protection procedure with respect to one
device/service/sub-unit on the first network;
35 a second contents protection unit for carrying out the

contents protection procedure with respect to another device/service/sub-unit on the second network;

a contents reception unit for receiving contents destined to the own device/service/sub-unit and encrypted according to one of the first and second contents protection units; and

a contents transfer unit for transferring the contents received by the contents reception unit to said each device/service/sub-unit on said another network, by encrypting the contents according to another one of the first and second contents protection units.

6. The relay device of claim 5, wherein the first contents protection unit and the second contents protection unit use different encryption schemes or identical encryption scheme based on different key information.

7. The relay device of claim 5, wherein the contents reception unit and the contents transmission unit are sealed within a single LSI.

8. The relay device of claim 5, wherein a first key information used in the contents protection procedure in the first contents protection unit and a second key information used in the contents protection procedure in the second contents protection unit are set to be identical.

9. The relay device of claim 8, wherein the contents protection procedure in said another one of the first and second contents protection units is carried out in units of contents/services/sub-units, using a prescribed key information.

10. The relay device of claim 5, further comprising:

a configuration information reception unit for receiving a configuration information from one device/service/sub-unit on the first network or the second network, the configuration information indicating at least
5 a presence or absence of an authentication format for said one device/service/sub-unit; and

a configuration recognition unit for recognizing a configuration of said one device/service/sub-unit according to the configuration information received by the
10 configuration information reception unit.

11. A relay device, comprising:

a first interface unit connected to a first network;

a second interface unit connected to a second network;

15 a first contents protection unit for carrying out a contents protection procedure with respect to one device/service/sub-unit on the first network;

a second contents protection unit for carrying out the contents protection procedure with respect to another
20 device/service/sub-unit on the second network;

a contents reception unit for receiving contents destined to an own device/service/sub-unit on the relay device and encrypted according to one of the first and second contents protection units, from a device on one of
25 the first network and the second network; and

a contents transmission unit for transmitting the contents received by the contents reception unit to a device/service/sub-unit on another one of the first network and the second network, by encrypting the contents
30 according to another one of the first and second contents protection units;

wherein a first key information used in the contents protection procedure in the first contents protection unit and a second key information used in the contents
35 protection procedure in the second contents protection unit

are set to be identical.

12. A communication device, comprising:

an interface unit connected to a network;

5 a copy protection processing unit for carrying out a prescribed contents protection procedure including at least an authentication procedure and/or a key exchange procedure, with respect to another device/service/sub-unit on the network;

10 a contents transmission unit for transmitting encrypted contents to which an address of the communication device is attached, either through a virtual channel on the network or by further attaching an identifier by which the encrypted contents can be uniquely identified by the communication device, to another device on the network;

15 a reception unit for receiving a query regarding a service/sub-unit/plug that is transferring the encrypted contents either through the virtual channel or by attaching the identifier, from said another device on the network;

20 and

a notification unit for notifying a service/sub-unit/plug that is transferring the encrypted contents, to said another device on the network in response to the query.

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13. A communication device, comprising:

an interface unit connected to a network;

30 a copy protection processing unit for carrying out a prescribed contents protection procedure including at least an authentication procedure and/or a key exchange procedure, with respect to another device/service/sub-unit on the network;

a contents reception unit for receiving encrypted contents to which an address of another device on the network is attached, either through a virtual channel on

the network or in a form having an identifier by which the encrypted contents can be uniquely identified by said another device further attached thereto, from said another device;

- 5 a transmission unit for transmitting a query regarding a service/sub-unit/plug that is transferring the encrypted contents either through the virtual channel or by attaching the identifier, to said another device on the network; and
10 a reception unit for receiving a notification regarding a service/sub-unit/plug that is transferring the encrypted contents, from said another device in response to the query.

14. A communication device, comprising:
15 an interface unit connected to a network;
 a contents transfer unit for transmitting or receiving encrypted contents with respect to another device on the network, through a flow identified by a set of a source address, a source port, a destination address, and a
20 destination port; and
 a copy protection processing unit for carrying out a prescribed contents protection procedure including at least an authentication procedure and/or a key exchange procedure with respect to said another device, using a prescribed
25 logical port, in units of the flow.

15. The communication device of claim 14, wherein an identifier of the flow is attached to information exchanged in at least a part of procedures included in the prescribed
30 contents protection procedure.

16. A communication device, comprising:
 an interface unit connected to a network;
 a copy protection processing unit for carrying out a
35 prescribed contents protection procedure including at least

an authentication procedure and/or a key exchange procedure, with respect to another device on the network; and

5 a contents transmission and reception unit for transmitting or receiving encrypted contents to which an address of a transmitting side device is attached, either through a virtual channel on the network or in a form having an identifier by which the encrypted contents can be uniquely identified by said transmitting side device
10 further attached thereto, with respect to said another device;

wherein at least one of an identifier of a service, a sub-unit, a virtual channel, or a plug that carries out exchange of the encrypted contents, and an identifier by
15 which the encrypted contents can be uniquely identified by said transmitting side device, is attached to information exchanged in at least a part of procedures included in the prescribed contents protection procedure.

20 17. A relay device, comprising:
a first interface unit connected to a first network;
a second interface unit connected to a second network;
a first copy protection processing unit for carrying out a prescribed contents protection procedure including at
25 least an authentication procedure and a key exchange procedure, with respect to one device/service/sub-unit on the first network;

a second copy protection processing unit for carrying out the prescribed contents protection procedure including
30 at least an authentication procedure and a key exchange procedure, with respect to another device/service/sub-unit on the second network;

a contents reception unit for receiving encrypted data containing specific contents from the first interface unit;
35 a decryption unit for decrypting the encrypted data

receiving by the contents reception unit, by using a contents protection key provided by the first copy protection processing unit, to obtain decrypted data;

5 a conversion unit for converting the decrypted data into converted data in another coding format;

an encryption unit for encrypting the converted data, by using a contents protection key provided by the second copy protection processing unit, to obtain re-encrypted data; and

10 a contents transmission unit for transferring the re-encrypted data to the second interface unit.

18. The relay device of claim 17, further comprising:

20 a proxy configuration unit for disclosing one device/service/sub-unit on the second network as one own device/service/sub-unit provided on the relay device with respect to a first network side, and transmitting to said one device/service/sub-unit on the second network an information having a content according to information destined to said one own device/service/sub-unit that is received from a device on the first network side, while also disclosing another device/service/sub-unit on the first network as another own device/service/sub-unit provided on the relay device with respect to a second network side, and transmitting to said another device/service/sub-unit on the first network an information having a content according to information destined to said another own device/service/sub-unit that is received from a device on the second network side;

30 wherein when the prescribed contents protection procedure between a device on one network among the first and second networks and a device/service/sub-unit on another network among the first and second networks is to be carried out, the proxy configuration unit carries out
35 the prescribed contents protection procedure with the

device on said one network by using one of the first and second copy protection processing units, while carrying out the prescribed contents protection procedure with the device/service/sub-unit on said another network by using
5 another one of the first and second copy protection processing units.

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- 10 19. A relay device, comprising:
a first interface unit connected to a first network;
a second interface unit connected to a second network;
a first contents protection unit for carrying out a contents protection procedure with respect to one device/service/sub-unit on the first network;
a second contents protection unit for carrying out the
15 contents protection procedure with respect to another device/service/sub-unit on the second network;
a contents reception unit for receiving contents destined to an own device/service/sub-unit on the relay device and encrypted according to one of the first and
20 second contents protection units, from a device on one of the first network and the second networks; and
a contents transmission unit for transmittting the contents received by the contents reception unit to a device/service/sub-unit on another one of the frist network
25 and the second network, by encrypting the contents according to another one of the first and second contents protection units;
wherein said one of the first and second contents protection units carries out an authentication and/or a key
30 exchange with a device/service/sub-unit on said one of the first network and the second network by referring to a relationship between the contents reception unit and the contents transmission unit, when there is a request for a precedure of the authentication and/or the key exchange
35 with respect to said another one of the first and second

contents protection units.

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